

C1 DNA cassette that encodes a heterologous protein into the coding sequence of said *sapA* homolog.

Please amend claim 5 as follows:

C2 5. (twice amended) The mutant *C. fetus* strain of claim 1, wherein said heterologous protein is an immunogen of a pathogen-selected from the group consisting of *Salmonella*, *Shigella*, *Campylobacter jejuni*, *E. coli* 0157:H7, human immunodeficiency virus (HIV), simian immunodeficiency virus (SIV) and animal pathogens.

Please amend claim 6 as follows:

C3 6. (amended) The mutant *C. fetus* strain of claim 1, wherein said DNA cassette comprises a 5' LPS-binding region of said *sapA* homolog, a 3' secretion signal region of said *sapA* homolog and sequence encoding said heterologous protein inserted between said binding region and said signal region.

Please amend claim 7 as follows:

C4 7. (amended) The mutant *C. fetus* strain of claim 1, wherein said DNA cassette comprises a 3' secretion signal of said

Cont *sapA* homolog and sequence encoding said heterologous protein inserted upstream of said secretion signal, but said DNA cassette does not has a 5' LPS-binding region of said *sapA* homolog.

Please amend claim 9 as follows:

C 9. (amended) A method of immunizing a host to develop mucosal and systemic immune responses to an immunogen carried by the mutant strain of claim 5, comprising the step of administering to said host a pharmacologically effective dose of the strain of claim 5.

Please amend claim 10 as follows:

C6 10. (amended) A mutant *C. fetus* strain expressing only one S-layer protein encoded by one *sapA* homolog due to a *recA* mutation that results in no functional RecA protein expression.

Please amend claim 11 as follows:

Sub D3
CH 11. (amended) The mutant *C. fetus* strain of claim 10, wherein said strain contains a chimeric protein comprising a heterologous antigen and a *sapA* homolog.

Please amend claim 12 as follows:

12. (amended) A mixture of mutant *C. fetus* strains, wherein due to *recA* mutation that results in no functional RecA protein expression in each of said strains each of said strain expresses only one S-layer protein comprising a heterologous antigen and a *sapA* homolog.

Please amend claim 13 as follows:

13. (amended) A method of immunizing a host to develop mucosal and systemic immune responses to the antigens of claim 12, comprising the step of administering to said host a pharmacologically effective dose of the strains of claim 12.

Please amend claim 15 as follows:

15. (twice amended) A strain of *Escherichia coli*. modified to express the surface array proteins C, D, E and F of *C. fetus*.

Please amend claim 16 as follows:

16. (twice amended) The *Escherichia coli*. of claim 15, further comprising a chimeric protein encoded by sequences

comprising a 5' LPS-binding region of a *sapA* homolog, a 3' secretion signal region of a *sapA* homolog and sequence encoding a heterogeneous protein inserted between said binding region and said signal region.

Please amend claim 18 as follows:

18. ~~(twice amended)~~ The mutant *C. fetus* strain of claim 1, wherein said mutant strain comprises more than one altered *sapA* homolog and only one unaltered *sapA* homolog.

REMARKS

Amendment

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."